

REMARKS

I. Introduction

In view of the above amendments and the following remarks, reconsideration of the rejections contained in the Office Action of December 23, 2008 is respectfully requested.

By this amendment claims 3 and 4 have been canceled without prejudice or disclaimer to the subject matter contained therein, and claims 5 and 6 have been added. Claims 5 and 6 are now pending in the application. No new matter has been added by these amendments.

The specification has been reviewed and revised. No new matter has been added by these revisions. Entry of the specification amendments is thus respectfully requested.

II. Prior Art Rejections

Currently, claims 3 and 4 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hair (US 5,820,439).

Claim 5 is patentable over Hair for the following reasons. Claim 5 requires a rolling angle detection device for a remote-controlled two-wheeled vehicle comprising, in part, a rolling angle detection means for detecting the rolling angle of the vehicle main body, a rolling angle control means for outputting an operation amount for the steering actuator based on the rolling angle detected by the rolling angle detection means and a rolling angle target value from the remote control receiver so as to bring the rolling angle closer to the rolling angle target value, a target value determination means for determining whether the rolling angle target value received by the remote control receiver is 0°; and a caster effect control means for generating a signal for

the steering actuator, the signal indicating that a right-rotational torque is to be applied to the steering shaft or the front fork via the steering actuator when the steering angle detected by the steering angle detection means is in the right direction, or indicating that a left-rotational torque is to be applied to the steering shaft or the front fork via the steering actuator when the steering angle detected by the steering angle detection means is in the left direction, wherein the signal generated by the caster effect control means is added to the operation amount output by the rolling angle control means at least when the target value determination means determines that the rolling angle target value is 0°.

In order to for the prior art to meet a means-plus-function limitation, a structure in the prior art which is equivalent to that which is claimed must perform a function identical to that which is claimed. See MPEP 2184 (“First, unless an element performs the identical function specified in the claim, it cannot be an equivalent for the purposes of 35 U.S.C. 112, sixth paragraph. *Pennwalt Corp. v. Durand-Wayland, Inc.*, 833 F.2d 931, 4 USPQ2d 1737 (Fed. Cir. 1987), *cert. denied*, 484 U.S. 961 (1988).”)

Hair discloses a gyro stabilized remote controlled toy motorcycle which includes a mechanical flywheel (66). As described in the specification of the Hair reference, this mechanical flywheel provides a gyroscopic effect which causes the toy motorcycle to “automatically right itself when the steering torque is removed” after having completed a turn. The Office Action of December 23, 2008 equates the gimbal assembly (56) and flywheel (66) of the Hair reference to the rolling angle detection means of the present invention. Claim 5 has been amended to more clearly invoke the sixth paragraph of 35 U.S.C. § 112, requiring “a rolling angle detection means for detecting the rolling angle of the vehicle main body.” The flywheel

and gimbal assembly of Hair do not detect the rolling angle of the toy motorcycle, but rather merely provide a stabilizing gyroscopic effect. As such, Hair does not disclose any structure which performs the identical function of claim 5, and thus cannot meet the requirements of claim 5. The Office Action further equates the flywheel and gimbal assembly of Hair to the control means of the present invention. However, the flywheel and gimbal assembly do not output an operation amount for the steering actuator based on the rolling angle detected, but rather simply provide a stabilizing gyroscopic effect. As such, Hair does not disclose any structure which performs the identical function of claim 5, and thus cannot meet the requirements of claim 5. The Hair reference further does not disclose any structure which is equivalent to the target value determination means and the caster effect control means required by claim 5 and which performs a function identical to that which is required of those two structures, respectively. As such, Hair cannot meet the requirements of claim 5.

Claim 6 is patentable over Hair for the following reasons. Claim 6 requires a rolling angle control device for a remote-controlled two-wheeled vehicle comprising, in part, a rolling angle detector for detecting the rolling angle of the vehicle main body, the rolling angle being the angle by which the two-wheeled vehicle deviates from vertical, and a controller for outputting an operation amount for the steering actuator based on the rolling angle detected by the rolling angle detector and a rolling angle target value from the remote control receiver so as to bring the rolling angle closer to the rolling angle target value, wherein the controller is configured to apply a signal to the operation amount for the steering actuator, the signal indicating that a right-rotational torque is to be applied to the steering shaft or the front fork via the steering actuator when the steering angle detected by the steering angle detector is in the right direction, or

indicating that a left-rotational torque is to be applied to the steering shaft or the front fork via the steering actuator when the steering angle detected by the steering angle detector is in the left direction.

A prior art device must be capable of performing the claimed function in order to meet a functional claim limitation. See MPEP 2173.05(g); see also Zoltar Satellite Alarm Sys. v. Motorola, Inc., 2007 U.S. Dist. LEXIS 95521 (D. Cal. 2007) (Stating that the claim language "a radio receiver for receiving a command" requires a prior art structure which is capable of receiving a command.)

As discussed above, the Office Action of December 23, 2008 equates the flywheel and gimbal assembly of Hair to the rolling angle detecting means of claim 3 and to the control means of claim 3. Because the simple mechanical flywheel and gimbal assembly of Hair is not capable of detecting the rolling angle of the vehicle main body, those structures cannot meet the rolling angle detector requirement of claim 6. Moreover, because the mechanical flywheel and gimbal assembly of Hair is not capable of outputting an operation amount for the steering actuator based on the detected rolling angle, those structures cannot meet the controller requirement of claim 6.

As discussed in detail in the specification, the present invention is a rolling angle detection device which detects the actual rolling angle of a remote-controlled two-wheeled vehicle. The rolling angle controller of the present invention outputs an operation amount to the steering actuator based on the detected rolling angle and a rolling angle target value. Because the present invention is capable of bringing the actual rolling angle of the two-wheeled vehicle closer to the target value, more precise control of the rolling angle is achieved.

It is thus submitted that the invention of the present application, as defined in claims 5

and 6, is not anticipated nor rendered obvious by the prior art, and yields significant advantages over the prior art. Allowance is respectfully requested.

In view of the foregoing amendments and remarks, inasmuch as all of the outstanding issues have been addressed, Applicants respectfully submit that the present application is now in condition for allowance, and action to such effect is earnestly solicited.

Should any issues remain after consideration of the response, however, the Examiner is invited to telephone the undersigned at the Examiner's convenience. If any fee beyond that submitted herewith, or extension of time is required to obtain entry of this Amendment, the undersigned hereby petitions the Commissioner to grant any necessary time extension and authorizes charging Deposit Account 23-0975 for any such fee not submitted herewith.

Respectfully submitted,

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